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NEAR-EARTH OBJECT (NEO) SURVEYOR DEVELOPMENT - CHALLENGES AND OPPORTUNITIES IN SUPPORT OF PLANETARY DEFENSE

Gabe Loftus[a,1,*]

[a]*Space Dynamics Laboratory, 416 E. Innovation Avenue, North Logan, Utah, 84341, USA, (435) 713-3400*

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The Near-Earth Object (NEO) Surveyor mission is a key element in our future planetary defense portfolio, which will provide a complete survey of our solar system in the infrared. The mission is designed to detect, track, and characterize small bodies throughout our solar system. By congressional mandate, NASA must discover more than 90% of all asteroids and comets that are larger than 140 meters in diameter and could potentially impact Earth. NEO Surveyor will provide critical decision support for stakeholders who must assess the risks of NEO impacts to Earth and identify potential mitigation strategies.

By using two heat-sensitive infrared imaging channels, NEO Surveyor will be able to detect NEOs that ground-based telescopes or space-based visible instrumentation are unable to detect due to the objects' darkness and the limitations of ground-based surveyal. These objects can "sneak through" our existing detection methods and are large enough to cause major regional damage if one were to impact Earth.

The Space Dynamics Laboratory, under the leadership of the Jet Propulsion Laboratory and in partnership with other organizations, is playing a critical role in subsystem development and observatory-level assembly, integration, and test. This presentation will review challenges, lessons learned, and critical accomplishments in the preparation for launch of NEO Surveyor.

*Corresponding author
Email address: gabriel.loftus@sdl.usu.edu (Gabe Loftus)
[1]Branch Head, Instrument and Camera Systems